

CLAIMS

1. Machine for producing a coffee beverage comprising a coffee powder container device and a fluid supply device to produce a coffee beverage, said devices being reciprocally mobile, so that when connected together they form an infusion chamber for said coffee powder, characterised by the fact that said container device can be removed from the machine.
2. Machine according to claim 1 characterised in that said container device is connected to a moving mechanism adapted to displace said container device from one position at a certain distance from said supply device to a position adherent to said supply device.
3. Machine according to one or more of the previous claims characterised in that said container device presents first and second means of connection to said moving mechanism.
4. Machine according to one or more of the previous claims characterised in that said first means of connection comprise at least one rotating pin and said second means of connection comprise hook-up couplings connected to a slide on said moving mechanism, mobile in relation to said pin.
5. Machine according to one or more of the previous claims characterised in that said rotating pin is fixed and positioned lower than said slide.
6. Machine according to one or more of the previous claims characterised in that said slide is connected by a sliding motion to a guide that commands at least the angular movement of said container device around said pin.

7. Machine according to one or more of the previous claims characterised in that said container device comprises at least three telescopic elements connected to each other by means of a sliding action, a first element being set on said rotating pin, a second element being connected in a sliding manner to said first element, and a third element being connected in a sliding manner to said second element and being adapted to house at least one portion of said supply device to form said infusion chamber.

8. Machine according to one or more of the previous claims characterised in that said second element presents first abutments adapted to collaborate with second elastic abutments of said first element, and during the extension of said container device, said first and second abutments being adapted to command the translation, firstly of said third element in relation to said first and second element, and during the retraction of said container device, the translation firstly of said second and third element in relation to said first element, and then the translation of said third element in relation to said second element.

9. Machine according to one or more of the previous claims characterised in that it comprises means of expulsion for the waste coffee powder from said container device.

10. Machine according to one or more of the previous claims characterised in that it comprises at least one blocking element adapted to maintain all the components united in said coffee powder container device when said device is removed

from the machine.

11. Machine according to one or more of the previous claims characterised in that said blocking element comprises a lever hinged to said first telescopic element, said lever presenting a protruding portion inserted inside a tubular portion adapted to house said pin, and moreover, presenting an end bent at right-angles for insertion into aligned holes in said second and third telescopic elements to prevent these elements from extending when said device is removed from said machine.

12. Machine according to one or more of the previous claims characterised in that it comprises safety means adapted to interrupt machine function in the case of faulty conditions, in particular in the connection between the third tubular element and the lower portion of said fluid supply device.

13. Machine according to one or more of the previous claims characterised in that said safety means comprise a position detector adapted to read the position of said third telescopic element connected to an electronic control processor adapted to prevent the triggering of a microswitch that commands the water supply to the infusion chamber until said third telescopic element is set in its correct position.

14. Machine according to one or more of the previous claims characterised in that following a certain time lapse after the connection between said third telescopic element and said supply device, said electronic control processor interrupts the function of said moving mechanism.

15. Machine according to one or more of the previous claims characterised in that hook-up teeth are foreseen attached through a spring to unite said container device with said machine, these teeth being able to be attached to and released from their respective holes through a reciprocal inward and outward motion.

16. Machine according to one or more of the previous claims characterised in that said hook-up teeth are enlarged at a certain point to prevent micro-switch activation of machine function in the case of partial or incorrect connection between said container device and said machine.

17. Machine for producing a coffee beverage characterised in that it comprises an interception tap for fluid or water on exit from the machine in the form of a hollow body having at least a first and second communicating space with the exterior and equipped with a piston connected in sliding mode internally, forming together with said body at least four chambers inside which steam or liquid can be passed alternatively.

18. Machine according to the previous claim characterised in that when turned to one of its configurations, said tap is adapted to activate or deactivate one or more microswitches that control the switch-on or switch-off of a water supply pump to the boiler and/or the switch-on or switch-off of the electric resistors /elements in the boiler.

19. Machine according to one or more of the claims 17 and following claims characterised in that three chambers of said

tap are formed by grooves in said piston and a fourth chamber presents a variable volume, and is formed between the crown of said hollow body and the crown of said piston.

20. Machine according to one or more of the claims 17 and following claims characterised in that a first chamber of said four chambers is connected to a duct that opens onto the crown of said piston, a second chamber is closed, a third chamber is connected to a duct that opens onto the exterior of said tap, and said fourth chamber is connected to a supply space for water or steam on exit from the machine.

21. Machine according to one or more of the claims 17 and following claims characterised in that said first space is realised on a side portion of said body, and said second space is realised on said crown of said hollow body.

22. Machine for producing a coffee beverage comprising a coffee powder container device and a fluid supply device to produce a coffee beverage being reciprocally mobile so that when united together, they form an infusion chamber for said coffee powder, characterised in that said fluid supply device is connected to said heated boiler so that the heat dispersed by said boiler heats said fluid supply device.

23. Heating method for a machine for producing coffee beverages characterised in that it consists in heating at least one fluid supply device to produce said coffee beverage using the heat dispersed from a boiler on said machine.

24. Method according to the previous claim characterised in that the boiler and the supply device are in contact with

each other and the heat is transmitted by conduction to guarantee appropriate heating of said supply device.

25. Method according to claim 23 and following claims characterised in that at least one portion of a container device is connected to said supply device during the periods when the machine is idle, so that said container device is also heated by said boiler.

26. Method according to one or more of the claims 23 and following claims characterised in that said container device is automatically connected to said supply device after a pre-established time lapse following the preparation of the last previous coffee beverage.

27. Machine for producing a coffee beverage, all as basically described and illustrated in the appended drawings and appended claims.